April 1, 1941. R. W. SAMPSON 2,237,012

PNEUMATIC MATTRESS AND THE LIKE

Filed March 2, 1940 2 Sheets-Sheet 1

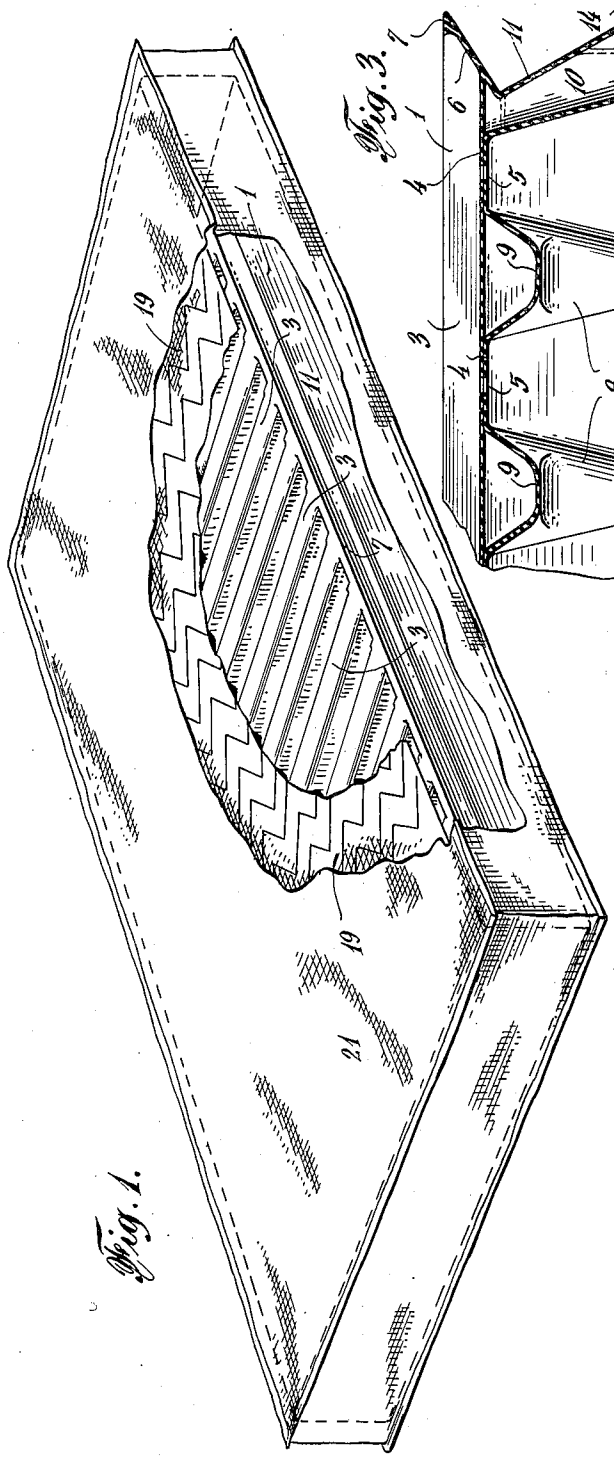


Fig. 1.

Fig. 3.

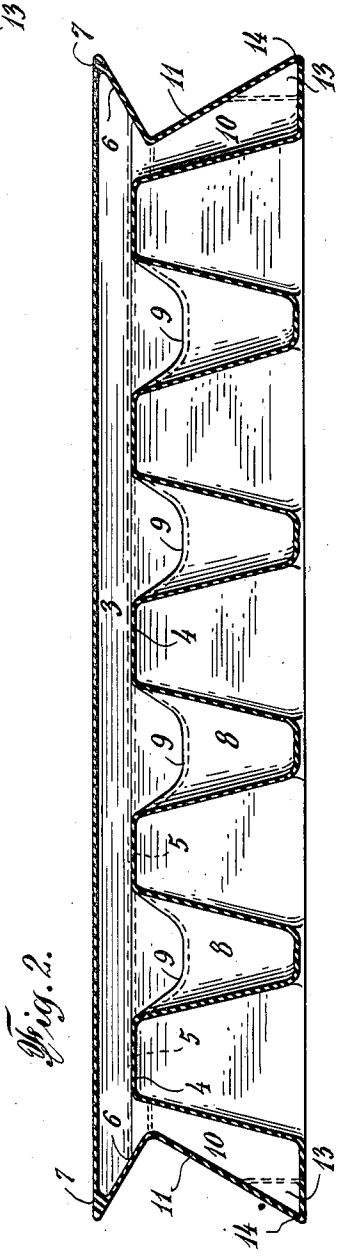


Fig. 2.

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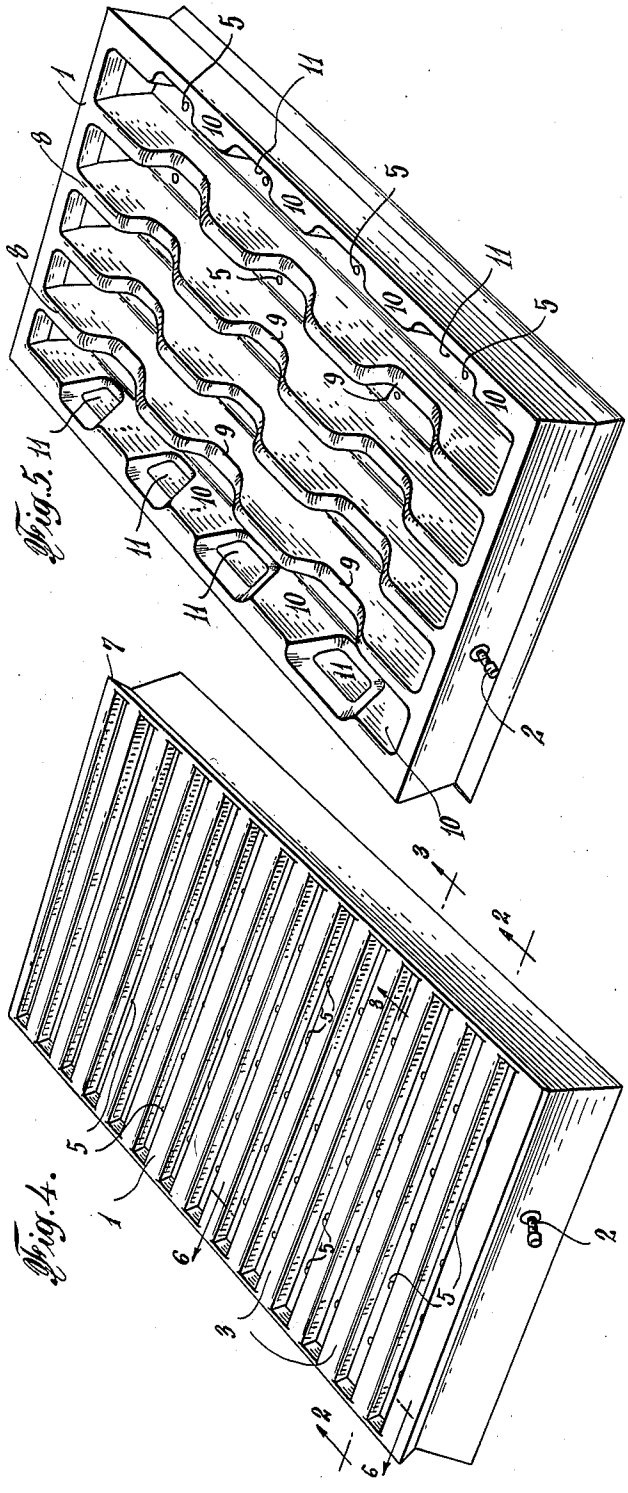


Fig. 5.

Fig. 4.

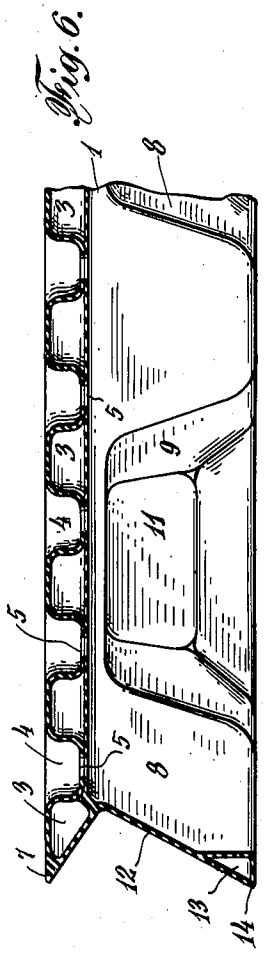


Fig. 6.

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Patented Apr. 1, 1941

2,237,012

UNITED STATES PATENT OFFICE

2,237,012

PNEUMATIC MATTRESS AND THE LIKE

Robert W. Sampson, New York, N. Y., assignor to Sampson Rubber Products Corporation of Delaware, New York, N. Y., a corporation of Delaware

Application March 2, 1940, Serial No. 321,808

5 Claims. (Cl. 5—348)

My invention relates to mattresses which are formed with inflatable cores outside of which suitable coverings are arranged more or less permanently.

Objects of my improvements are to produce an inflatable core which will be the foundation for a mattress the top and bottom of which shall be substantially flat and be connected by an edge or boxing, also substantially flat, at right angles to the top and bottom; to prevent distortion of the top, bottom and boxing by bulging of the core when inflated; to form the core so that it shall embody valuable features of stability and comfort shown in my United States Patents Nos. 1,777,477, 1,928,675 and 2,069,422, in combination with new features peculiarly adapted for producing and preserving the shape of the completed mattress; and to secure the other advantages hereinafter pointed out and claimed.

In my Patent No. 2,069,422 I have shown how a flat, outwardly projecting edge may be formed around the upper edge of the rubber core of a mattress the upper face of which embodies a series of comparatively small, parallel, inflated cross-members. But the bottom of the core, being formed of much larger and longitudinally disposed inflatable members, locally arched, did not present itself suitably for the formation of a flat surrounding edge comparable to the upper edge. I will now explain how such an edge may be provided for the bottom of the core.

In the drawings, Fig. 1 is a perspective view, partly broken away, of a mattress embodying my invention; Fig. 2 is a sectional view of the core, on an enlarged scale, taken on the line 2—2 of Fig. 4; Fig. 3 is a view, on the same enlarged scale, of a section of the core taken on the line 3—3 of Fig. 4; Fig. 4 is a perspective view of the top of the core; Fig. 5 is a perspective view of the bottom of the core; Fig. 6 is a sectional view taken on the line 6—6 of Fig. 4.

Similar parts are designated by similar reference numerals in all the figures.

The core 1 is adapted to receive and hold air, which may be introduced or allowed to escape through a suitable valve, as 2, the interior of the core being provided with numerous interconnecting air channels through which the air may move from place to place during the use of the mattress, the air pressure within the core remaining uniform in all parts of the core.

The upper side of the core is formed with a series of comparatively small, parallel air channels 3, 3, spaced by webs 4, 4, preferably provided with ventilating eyelets 5, 5, the ends of these air channels being closed and sloped inwardly and downwardly; and a flat, stiffened edge 7 entirely surrounds the top of the core, being supported at the ends of the core by the under sloped walls of the outside air chambers 3, 3.

This arrangement provides a continuous flat, stiffened, overhanging upper edge all around the core.

The under side of the core is formed with several comparatively large air channels 8, 8, each of which is arched as at 9, 9, to strengthen the inflated channels when under load. When inflated, these channels bulge outward somewhat, and cannot be advantageously employed to make a flat, under cut edge for the under side of the mattress. And, to remedy this, I provide, at each side, a series of flattened air pockets 10, 10, flatter and smaller than the chambers of 8, 8, the series of pockets 10, 10 forming part of the general system of air channels within the core, and being connected and supported by a web-like element 11, 11 outwardly sloping and having an air chambered flat lower edge lying in the same vertical planes as the edges of the top, and serving to produce a substantially flat side. Any bulging of the pockets 10, 10 outwardly will not be sufficient to extend them beyond said vertical lines.

The ends of the chambers 8, 8 are closed by inwardly sloping walls which merge with the ends of the core in a backwardly sloping wall, having a small inflatable channel which continues all around the lower edge, the edge being preferably stiffened, as at 14, the better to preserve its form.

A pad 19, may be wrapped around the core lengthwise, so as not to project objectionably over the sides of the core, to bulge them out, and the padded core may then be inclosed in a casing 21, as shown in Fig. 1. When thus assembled the top and bottom of the mattress will be flat and the boxing, extending between the outwardly extended top and bottom edges will be smooth and flat, and will not develop unsightly bulges during the use of the mattress, the space provided by sloping in the sides between the top and bottom being sufficient to allow for any normal expansion of adjacent air channels and chambers.

By means of my improvements I obtain a mattress with an unitary inflatable core, having the advantages of relatively transverse systems of air chambers, straight, flat and stiffened top and bottom edges, and a flat uniform boxing all

around it; it is strong in service, durable, and economical to manufacture, is easy to assemble, particularly where the case is closed with a zipper, and to disassemble for cleaning and repair, and may be readily deflated for convenient packing and reinflated when desired.

I wish it to be understood that the embodiment of my invention which I have illustrated and described is to be regarded as typical and not exclusive, for construction may be modified as by the use of substantial equivalents, without departing from the spirit of my invention and the scope of my claims.

Having thus described my invention what I claim and desire to secure by Letters Patent of the United States is:

1. As a new article of manufacture, an integral, rectangular, pneumatic core for mattresses and the like, provided on its upper face with a series of air chambers separated by depressions and having a surrounding, outwardly projecting, flat, angular edge, the core having in its lower face a plurality of larger, locally arched, parallel air chambers transversely disposed relative to said first mentioned series of air chambers, and medially disposed, and on each side a plurality of smaller air chambers with flattened connecting members forming a continuous side, with an outwardly projecting angular edge substantially parallel to the edge of the top.

2. As a new article of manufacture, a rectangular, integral, pneumatic mattress core having a series of air chambers extending across the top thereof, another series of larger and dissimilar air chambers extending across the bottom thereof, with their longitudinal axes angularly offset from those of the first mentioned series, and a flat, flexible, inflatable, integral, marginal rim, having an outwardly extending, angular upper edge surrounding the upper edge of the core in the plane of its top and closing the ends of the depressions in the top, and a similar rim surrounding the lower edge of the bottom in the plane thereof.

3. As a new article of manufacture, a rectangular, integral, pneumatic mattress core having a series of air chambers extending across the top thereof, another series of larger and dissimilar air chambers extending across the bottom thereof with their longitudinal axes angularly offset from those of the first mentioned series, and a flat, flexible, inflatable, integral, marginal rim, having an outwardly extending, angular upper edge surrounding the upper edge of the core in the plane of its top and closing the ends of the depressions in the top, and a similar rim surrounding the lower edge of the bottom in the plane thereof the edges lying in substantially parallel horizontal planes and in substantially the same vertical planes.

4. As a new article of manufacture a one piece, rectangular, pneumatic core for mattresses and the like, embodying integral form-retaining air chambers and adapted when inflated to be sustained by such air chambers only, said core including a continuous, flat outwardly projecting edge surrounding its top and a similar edge surrounding its bottom and an inwardly guttered, continuous boxing element connecting said edges.

5. As a new article of manufacture a one piece, rectangular, pneumatic core for mattresses and the like, provided on its upper face with a series of parallel air chambers separated by depressions, and on its lower face with a plurality of larger locally arched parallel air chambers, disposed medially, and also disposed transversely to said first mentioned series, and on each side having a substantially inwardly guttered boxing member with inflatable portions connecting its sides, said core embodying, when inflated and sustained by its integral elements only, a continuous, flat outwardly projecting edge surrounding its top and a similar edge surrounding its bottom.

ROBERT W. SAMPSON.